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EXAMINER

ALEJANDRO, RAYMOND

ART UNIT	PAPER NUMBER
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1795

MAIL DATE	DELIVERY MODE
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04/10/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/800,905	Applicant(s) TOTIR ET AL.	
	Examiner Raymond Alejandro	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03/20/08.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,8-12,14-24,28-35,39-43 and 45-54 is/are pending in the application.
- 4a) Of the above claim(s) 29,30 and 47-54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,8-12,14-24,28,31-35,39-43,45-46 and 55-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

This office action is responsive to the amendment filed 03/20/08. The applicant has overcome all grounds of rejections. Refer to the abovementioned amendment for specific details on applicant's rebuttal arguments and remarks. However, the present claims are again rejected over new grounds of rejection as posited infra on the written record.

Election/Restrictions and Claim Disposition

1. Claims 29-30 and 47-54 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and/or species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 03/16/07.
2. Claims 6-7, 13, 25-27, 36-38 and 44 were cancelled previously.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 8-12, 17-24, 28, 31-35, 39-43, 45-46 and 55-58 rejected under 35 U.S.C. 102(b) as being anticipated by Miyaki et al 2002/0114993.

As to claims 1, 17, 31, 39, 45:

Miyaki et al disclose a battery comprising a positive electrode and a negative electrode (Abstract). Examples of preferred positive electrode active materials include MnO₂ (P0425). The

Art Unit: 1795

negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465). The battery can include a lithium salt or more than one Li-salt soluble in solvents in the amount of 0.2-3 mol/L (0450-0451). A current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485). *Thus, the battery includes an aluminum surface.* The battery includes metallic surfaces other than Al as part of lead plates (P0487) and battery case (P0489), or a negative electrode foil (P0437) or conductive agent (P0438). Specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458). *Certain degree of electrical contact does exist in the battery as a whole.*

Examiner's note: *it is noted that claims 9-12, 21-24, 31, 33-35, 39, 41-43 and 45 include the limitation that the electrolyte contains the bis(oxalato)borate salt at a concentration that is equal to or less than about 0.2 M, 0.15 M, 0.1 M and 0.05 M. Therefore, that limitation includes zero (0) as a lower limit. Accordingly, the foregoing limitation also reads on free of "LiBOB" (the claimed Li-salt) or "0 mol % or mass % or volume % at all" of LiBOB (See MPEP 2173.05(c) Numeral Ranges & Amounts Limitations, II. Open-ended Numerical Ranges. Note that the electrolyte of Miyaki et al can contain Li-salts other than LiBOB. This interpretation is provided herein because the Examiner remains unsure about the intended scope (extent) of the applicant's invention. In fact, there is no question that a reasonable interpretation of the above claims is that the concentration of the claimed Li-salt be zero (0). If that is the case, a plurality of references would read on applicant's invention.*

As to claims 3-4:

Miyaki et al envision using two Li-salts; and up to a total of four (4) Li-salts (P0450).

As to claim 5:

Art Unit: 1795

Miyaki et al envision using an element made of stainless steel (that is a second metal surface), specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458).

As to claim 8:

A current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485).

As to claims 9, 21 and 28:

The battery includes lithium salts soluble in solvents in the amount of 0.2-3 mol/L (0450-0451). The Li-salt may be LiCF_3SO_3 (Li-trifluoromethane sulfonate) (P0450).

As to claims 19-20:

Examples of preferred positive electrode active materials include MnO_2 (P0425). The negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465).

As to claims 55-58:

Miyaki et al envision using both an element made of stainless steel (that is a second metal surface), specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458) and a current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-5,8-9,17-21, 28, 31-32, 39-40, 45-46, 55-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyaki et al 2002/0114993 in view of Wietelmann et al 6506516.

As to claims 1, 17, 31, 39, 45:

Miyaki et al disclose a battery comprising a positive electrode and a negative electrode (Abstract). Examples of preferred positive electrode active materials include MnO₂ (P0425). The negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465). The battery can include a lithium salt or more than one Li-salt soluble in solvents in the amount of 0.2-3 mol/L (0450-0451). A current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485). *Thus, the battery includes an aluminum surface.* The battery includes metallic surfaces other than Al as part of lead plates (P0487) and battery case (P0489), or a

Art Unit: 1795

negative electrode foil (P0437) or conductive agent (P0438). Specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458). *Certain degree of electrical contact does exist in the battery as a whole. Examiner's note: in this case, the Miyaki et al reference is being interpreted in a different manner than in item 4.*

As to claims 3-4:

Miyaki et al envision using two Li-salts; and up to a total of four (4) Li-salts (P0450).

As to claim 5:

Miyaki et al envision using an element made of stainless steel (that is a second metal surface), specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458).

As to claim 8:

A current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485).

As to claims 9, 21 and 28:

The battery includes lithium salts soluble in solvents in the amount of 0.2-3 mol/L (0450-0451). The Li-salt may be LiCF_3SO_3 (Li-trifluoromethane sulfonate) (P0450).

As to claims 19-20:

Examples of preferred positive electrode active materials include MnO_2 (P0425). The negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465).

As to claims 55-58:

Miyaki et al envision using both an element made of stainless steel (that is a second metal surface), specifically, a suitable material of a current collector for a negative electrode include

Art Unit: 1795

stainless steel (P0458) and a current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485).

Miyaki et al disclose an electrochemical battery in accordance with the aspect mentioned above. However, the preceding reference fails to expressly disclose the specific electrolyte containing the specific lithium-bis(oxalato)borate.

As to claims 1-2, 17-18, 31-32, 39-40, 45-46:

Wietelmann et al discloses the use of lithium bisoxalatoborate as a conducting salt in lithium batteries (Title/ Abstract/ Col 1, lines 5-8/ Col 2, lines 25-26, 40-45, 63-64/ CLAIM 1 & 14). Wietelmann et al CLEARLY discloses the beneficial effects of using the same including being an electrochemically stable lithium compound which as a good solubility in aprotic solvents used by battery industry; having an excellent oxidation resistance; excellent conductivity; easily soluble in both water and aprotic solvents and being fully stable up to certain battery working temperatures (COL 2, lines 20-65).

In view of the above, it would have been obvious to a skilled practitioner at the time the invention was made to use the specific lithium-bis(oxalato)borate of Wietelmann et al in the electrolyte of Miyaki et al because Wietelmann et al describes the beneficial effects of using the same including being an electrochemically stable lithium compound which as a good solubility in aprotic solvents used by battery industry; having an excellent oxidation resistance; excellent conductivity; easily soluble in both water and aprotic solvents and being fully stable up to certain battery working temperatures (COL 2, lines 20-65). *Note that Miyaki et al is not limited to a single Li-salt itself as it discloses multiple examples of suitable Li-salts soluble in solvents and using a plurality of those Li-salts together. In view of this, the teaching of Wietelmann et al that*

Art Unit: 1795

lithium-bis(oxalato)borate is a suitable conducting salt in lithium batteries provides sufficient guidance to combine, mix or substitute Wietelmann et al's Li-salt with/for the lithium salts of Miyaki et al.

8. Claims 1-5,8-9,17-21, 28, 31-32, 39-40, 45-46, 55-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyaki et al 2002/0114993 in view of Jow et al 7172834.

As to claims 1, 17, 31, 39, 45:

Miyaki et al disclose a battery comprising a positive electrode and a negative electrode (Abstract). Examples of preferred positive electrode active materials include MnO₂ (P0425). The negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465). The battery can include a lithium salt or more than one Li-salt soluble in solvents in the amount of 0.2-3 mol/L (0450-0451). A current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485). *Thus, the battery includes an aluminum surface.* The battery includes metallic surfaces other than Al as part of lead plates (P0487) and battery case (P0489), or a negative electrode foil (P0437) or conductive agent (P0438). Specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458). *Certain degree of electrical contact does exist in the battery as a whole.*

As to claims 3-4:

Miyaki et al envision using two Li-salts; and up to a total of four (4) Li-salts (P0450).

As to claim 5:

Art Unit: 1795

Miyaki et al envision using an element made of stainless steel (that is a second metal surface), specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458).

As to claim 8:

A current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485).

As to claims 9, 21 and 28:

The battery includes lithium salts soluble in solvents in the amount of 0.2-3 mol/L (0450-0451). The Li-salt may be LiCF_3SO_3 (Li-trifluoromethane sulfonate) (P0450).

As to claims 19-20:

Examples of preferred positive electrode active materials include MnO_2 (P0425). The negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465).

As to claims 55-58:

Miyaki et al envision using both an element made of stainless steel (that is a second metal surface), specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458) and a current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485).

Miyaki et al disclose an electrochemical battery in accordance with the aspect mentioned above. However, the preceding reference fails to expressly disclose the specific electrolyte containing the specific lithium-bis(oxalato)borate.

As to claims 1-2, 17-18, 31-32, 39-40, 45-46:

Jow et al disclose a lithium battery including an electrolyte comprised of a non-aqueous solvent and a salt mixture wherein a specific additive salt include Li-bis(oxalato)borate being present in the amount of 0.1-60 mole % (Abstract/COL 2, lines 63-67/ Col 3, lines 35-40/ COL 5, lines 48-52).

In view of the above, it would have been obvious to a skilled practitioner at the time the invention was made to use the specific lithium-bis(oxalato)borate of Jow et al in the electrolyte of Miyaki et al because Jow et al describes such a specific Li-salt assists in stabilizing electrochemically active material and increasing cycling capacity of the battery. Thus, it enhances overall battery stability and cycle capacity of the battery. *Note that Miyaki et al is not limited to a single Li-salt itself as it discloses multiple examples of suitable Li-salts soluble in solvents and using a plurality of those Li-salts together. In view of this, the teaching of Jow et al that lithium-bis(oxalato)borate is a suitable conducting salt to be used in combination with other Li-salts in lithium batteries provides sufficient guidance to combine, mix or substitute Jow et al's Li-salt with/for the lithium salts of Miyaki et al.*

9. Claims 1-5,8-9,17-21, 28, 31-32, 39-40, 45-46, 55-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyaki et al 2002/0114993 in view of the publication DE 10049097 (herein called the DE'097).

As to claims 1, 17, 31, 39, 45:

Miyaki et al disclose a battery comprising a positive electrode and a negative electrode (Abstract). Examples of preferred positive electrode active materials include MnO₂ (P0425). The negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465). The battery can include a lithium salt or more than one Li-salt soluble in solvents in the amount of 0.2-3

Art Unit: 1795

mol/L (0450-0451). A current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485). *Thus, the battery includes an aluminum surface.* The battery includes metallic surfaces other than Al as part of lead plates (P0487) and battery case (P0489), or a negative electrode foil (P0437) or conductive agent (P0438). Specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458). *Certain degree of electrical contact does exist in the battery as a whole.*

As to claims 3-4:

Miyaki et al envision using two Li-salts; and up to a total of four (4) Li-salts (P0450).

As to claim 5:

Miyaki et al envision using an element made of stainless steel (that is a second metal surface), specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458).

As to claim 8:

A current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485).

As to claims 9, 21 and 28:

The battery includes lithium salts soluble in solvents in the amount of 0.2-3 mol/L (0450-0451). The Li-salt may be LiCF_3SO_3 (Li-trifluoromethane sulfonate) (P0450).

As to claims 19-20:

Examples of preferred positive electrode active materials include MnO_2 (P0425). The negative electrode material may be metallic lithium or a lithium alloy (P0436, 0465).

As to claims 55-58:

Miyaki et al envision using both an element made of stainless steel (that is a second metal surface), specifically, a suitable material of a current collector for a negative electrode include stainless steel (P0458) and a current collector for the positive electrode can be made of aluminum (P0458, 0465, 0485).

Miyaki et al disclose an electrochemical battery in accordance with the aspect mentioned above. However, the preceding reference fails to expressly disclose the specific electrolyte containing the specific lithium-bis(oxalato)borate.

As to claims 1-2, 17-18, 31-32, 39-40, 45-46:

The DE'097 discloses that lithium batteries (both primary and secondary battery cells) commonly used contain ionically conducting electrolytes including a conducting salt such as lithium bis(oxalate)borate (P0002). The DE'097 goes on to imply that said salt is good for use in a battery because it decomposes more or less rapidly in the presence of protic compounds (solvents) (P0002).

In view of the above, it would have been obvious to a skilled practitioner at the time the invention was made to use the specific lithium-bis(oxalato)borate of the DE'097 in the electrolyte of Miyaki et al because the DE'097 teaches that such a specific Li-salt find utility in lithium battery applications because it is an ionically conducting salt and decomposes more or less rapidly in the presence of solvents. *Note that Miyaki et al is not limited to a single Li-salt itself as it discloses multiple examples of suitable Li-salts soluble in solvents and using a plurality of those Li-salts together. In view of this, the teaching of the DE'097 that lithium bis(oxalato)borate is a suitable conducting salt for use in lithium batteries provides sufficient guidance to combine, mix or substitute the DE'097's Li-salt with/for the lithium salts of Miyaki et al.*

10. Claims 9-12, 21-24, 33-35, 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over: a) Miyaki et al 2002/0114993 in view of Wietelmann et al 6506516; and/or b) Miyaki et al 2002/0114993 in view of Jow et al 7172834; and/or c) Miyaki et al 2002/0114993 in view of the publication DE 10049097 (herein called the DE'097) as applied to the preceding claims above, and further in view of Amine et al 2005/0019670.

Miyaji et al, Wietelmann et al, Jow et al and the DE'097 are applied, argued and incorporated herein for the reasons discussed above. Nonetheless, none of the foregoing references expressly suggest the specific Li-salt concentration/amount.

Amine et al disclose Li-based batteries (TITLE) using lithium- bis(oxalato)borate (LiBOB) in a specified amount (P0018). Amine et al disclose Li-based batteries (TITLE) using LiBOB in an amount ranging from .0005 to about 2 wt % (P0012), specifically in an amount of 0.005 % % (P0018).

In view of the above, it would have been obvious to a skilled artisan at the time the invention was made to use the specific Li-salt [bis(oxalate)borate salt] in the disclosed amount of Amine et al in the battery of Miyaji et al, Wietelmann et al, Jow et al and the DE'097, as combined above, because Amine et al teach when the specified Li-salt is used in the disclosed amount the cell shows better capacity retention than other cell system using other Li-salt additives. Further, the specified Li-salt, when used in the disclosed amount, have the ability to passivate the surfaces of both the anode and the cathode, thereby enhancing the capacity retention of both electrodes. This provides strong protection against the surface reaction that may otherwise lead to an increase in interfacial resistance and fading of both the capacity and the

Art Unit: 1795

power of cell. Generally speaking, differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Thus, it is prima-facie obvious to choose or select the specific amount of the Li-salt. ***See MPEP 2144.05 Obviousness of Ranges.***

11. Claims 14-16 and 55-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over: a) Miyaki et al 2002/0114993 in view of Wietelmann et al 6506516; and/or b) Miyaki et al 2002/0114993 in view of Jow et al 7172834; and/or c) Miyaki et al 2002/0114993 in view of the publication DE 10049097 (herein called the DE’097) as applied to the preceding claims above, and further in view of Krause et al 5691081.

Miyaji et al, Wietelmann et al, Jow et al and the DE’097 are applied, argued and incorporated herein for the reasons discussed above. Nonetheless, none of the foregoing references expressly suggest the specific dimension of the aluminum surface, and the steel surface.

Concerning claims 14-16 and 55-58:

Krause et al disclose lithium-based batteries (TITLE) including either primary or secondary batteries (COL 7, lines 55-58) comprising a Li-anode (COL 7, lines 34-40) and a cathode containing at least manganese (COL 7, lines 34-55); an electrolyte containing Li-salt in an amount ranging from at least 0.1 M (COL 6, lines 57-63/COL 5, line 20-26) and an aluminum

Art Unit: 1795

cathode current collector having a thickness of 0.51 mm (COL 12, lines 53-55/CLAIM 1/Abstract/COL 1, lines 15-22 & lines 60-61). Krause et al use a steel-based materials such as chromium steel and stainless steel as the cell can 10 (Col 12, lines 54-60).

Based on the aforementioned, it would have been obvious to a skilled artisan at the time the invention was made to use the specific Al current collector and its dimension of Krause et al in any one of the cell battery of Miyaji et al, Wietelmann et al, Jow et al and the DE'097, as combined above, because Krause et al disclose that batteries comprising the specific Al current collector (Al-surface portion) having the specified dimension exhibits high voltages and optimal performance characteristics such as unrestricted operating temperature ranges, suitable discharge/charge rates and adequate cycling performance, particularly when Al components are used. *Moreover, where the only difference between the prior art and the claims is a recitation of relative dimensions (i.e. changes in size/proportion) of the claimed feature and a feature having the claimed relative dimensions would not perform differently than the prior art device, element or member, the claimed device/element/member is not patentably distinct from the prior art device//element/member. That is, limitations relating to the size of the feature/element/member are not sufficient to patentably distinguish over the prior art as it is noted that changes in size is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular size or dimension of the claimed Al portion is significant. In re Rose 105 USPQ 237; In re Rinehart 189 USPQ 143; In Gardner v. TEC Systems, Inc., 220 USPQ 777 & 225 USPQ 232, (See MPEP 2144.04 [R-1] Legal Precedent as Source of Supporting Rationale).*

With regards to the steel surface, it would have been obvious to a person of ordinary skill at the time of invention to use the steel-based material of Krause et al to make the housing (the cell can) of Miyaji et al, Wietelmann et al, Jow et al and the DE'097, as combined above, because Krause et al teach that such a housing material is an effective material to contain or enclose battery components as it is adaptable to the battery chemical environment, and is easy to be sealed. *In this respect, the claim would have been obvious because the substitution of one known element (one metal based housing element) for another (other metal based housing element) would have yielded predictable results to one of ordinary skill in the art at the time of the invention. Stated differently, simple substitution of one known, equivalent element for another to obtain predictable results is prima-facie obvious. KSR International Co. v. Teleflex Inc., 550 US- 82 USPQ2d 1385, 1396 (2007). The predictable result of using the steel-based housing material of Krause et al as the housing material in the battery of Birke-Salam et al is that it is an effective material for housing battery components under the battery's specific chemical environment.*

Response to Arguments

12. Applicant's arguments with respect to all pending claims have been considered but are moot in view of the new ground(s) of rejection.

13. It bears noting that claims 9-12, 21-24, 31, 33-35, 39, 41-43 and 45 include the limitation that the electrolyte contains the bis(oxalato)borate salt at a concentration that is equal to or less than about 0.2 M, 0.15 M, 0.1 M and 0.05 M. Therefore, that limitation includes zero (0) as a lower limit. Accordingly, the foregoing limitation also reads on free of "LiBOB" (the claimed Li-salt) or "0 mol % or mass % or volume % at all" of LiBOB (See MPEP 2173.05(c) Numeral

Art Unit: 1795

Ranges & Amounts Limitations, II. Open-ended Numerical Ranges. Note that the electrolyte of Miyaki et al can contain Li-salts other than LiBOB. This interpretation is provided herein because the Examiner remains unsure about the intended scope (extent) of the applicant's invention. In fact, there is no question that a reasonable interpretation of the above claims is that the concentration of the claimed Li-salt be zero (0). If that is the case, a plurality of references would read on applicant's invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Raymond Alejandro/
Primary Examiner, Art Unit 1795

Application/Control Number: 10/800,905
Art Unit: 1795

Page 18